

CLAIMS

What is claimed is:

Sub A 3 1. A universal holding fixture for holding an object, comprising:
a plurality of dual axis clamps that are each rotatably and slidably secured to rods to form an articulated structure, and wherein selected rods are suitably positioned and secured to hold the object.

2. The fixture recited in Claim 1 wherein selected ones of the dual axis clamps are secured to a base.

Sub A 4 3. The fixture recited in Claim 2 wherein a fixed rod is secured to the base and the articulated structure comprises eight dual axis clamps that are slidably secured to six rods.

4. The fixture recited in Claim 3 further comprising two additional rods that are slidably secured to a selected one of the four rods by way of two additional dual axis clamps.

5. The fixture recited in Claim 1 wherein the articulated structure comprises eight dual axis clamps that are slidably secured to six rods.

6. The fixture recited in Claim 5 further comprising two additional rods that are slidably secured to a selected one of the four rods by way of two additional dual axis clamps.

7. The fixture recited in Claim 1 wherein the articulated structure comprises:
a plurality of first dual axis clamps that are slidably and rotatably secured to a fixed rod and that are each slidably secured to a second transverse rod;

5 a plurality of second dual axis clamps that are slidably and rotatably secured to a respective second rod and that are each slidably and rotatably secured to a third rod that is disposed generally transverse to the respective second rod;

a plurality of third dual axis clamps that are slidably and rotatably secured to a respective third rod and that are each slidably and rotatably secured to a fourth rod that is disposed generally transverse to the respective third rod; and

10 a plurality of fourth dual axis clamps that are slidably and rotatably secured to a respective fourth rod and that are each slidably and rotatably secured to a fifth rod.

8. The fixture recited in Claim 7 further comprising a plurality of fifth dual axis clamps that are slidably and rotatably secured to the fifth rod and that are each slidably secured to a sixth rod.

9. The fixture recited in Claim 1 wherein plurality of first dual axis clamps are secured to a base and wherein the fixture further comprises a plurality of fifth dual axis clamps that are slidably and rotatably secured to the fifth rod and that are each slidably secured to a sixth rod, and wherein the sixth rods support the fifth rod at different 5 positions above the base.

10. The fixture recited in Claim 7 further comprising a plurality of threaded machine screws that interconnect pairs of second and third dual axis clamps.

Sub A57 11. A universal holding fixture for holding an object, comprising:
a base; and

an articulated structure secured to the base that comprises a plurality of dual axis clamps that are each rotatably and slidably secured to one or more rods, and wherein 5 ends of selected ones of the rods are suitably positioned and secured to hold the object.

12. The fixture recited in Claim 11 wherein a fixed rod is secured to the base and the articulated structure comprises eight dual axis clamps that are slidably secured to six rods.

13. The fixture recited in Claim 12 further comprising two additional rods slidably secured to a selected one of the six rods by way of two additional dual axis clamps.

14. The fixture recited in Claim 11 wherein the articulated structure comprises:
a plurality of first dual axis clamps that are slidably and rotatably secured to a fixed rod and that are each slidably secured to a second transverse rod;
a plurality of second dual axis clamps that are slidably and rotatably secured to a 5 respective second rod and that are each slidably and rotatably secured to a third rod that is disposed generally transverse to the respective second rod;

a plurality of third dual axis clamps that are slidably and rotatably secured to a respective third rod and that are each slidably and rotatably secured to a fourth rod that is disposed generally transverse to the respective third rod; and

10 a plurality of fourth dual axis clamps that are slidably and rotatably secured to a respective fourth rod and that are each slidably and rotatably secured to a fifth rod.

15. The fixture recited in Claim 14 further comprising a plurality of fifth dual axis clamps that are slidably and rotatably secured to the fifth rod and that are each slidably secured to a sixth rod.

16. The fixture recited in Claim 14 further comprising a plurality of threaded machine screws that interconnect pairs of second and third dual axis clamps.

Sub A6 17. A universal holding fixture for holding an object, comprising:
a base; and
an articulated structure rotatably secured to the base that comprises:
a plurality of first dual axis clamps that are slidably and rotatably secured to a fixed rod and that are each slidably secured to a second transverse rod;
a plurality of second dual axis clamps that are slidably and rotatably secured to a respective second rod and that are each slidably and rotatably secured to a third rod that is disposed generally transverse to the respective second rod;
a plurality of third dual axis clamps that are slidably and rotatably secured to a respective third rod and that are each slidably and rotatably secured to a fourth rod that is disposed generally transverse to the respective third rod; and
a plurality of fourth dual axis clamps that are slidably and rotatably secured to a respective fourth rod and that are each slidably and rotatably secured to a fifth rod.

18. The fixture recited in Claim 17 further comprising a plurality of fifth dual axis clamps that are slidably and rotatably secured to the fifth rod and that are each slidably secured to a sixth rod.

19. The fixture recited in Claim 17 further comprising a plurality of threaded machine screws that interconnect pairs of second and third dual axis clamps.